

SQL: Introduction

DB2 SQL for Java Developers

SQL: Introduction

Chapter 1:

Objectives

You will learn:

- SQL - Structured Query Language.
- SQL statements.
- SQL commands.
- Resultsets.
- SQL language elements.

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SQL - Structured Query Language: The Basics

- SQL is a relational database that establishes relationships between tables of data.
 - Each table is assigned a unique name to identify its collection of columns and rows.
 - Each row represents a record.
- The record contains fields that are identified by column names.
- Each column or field has specific attributes, such as data type and format.

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SQL Statements

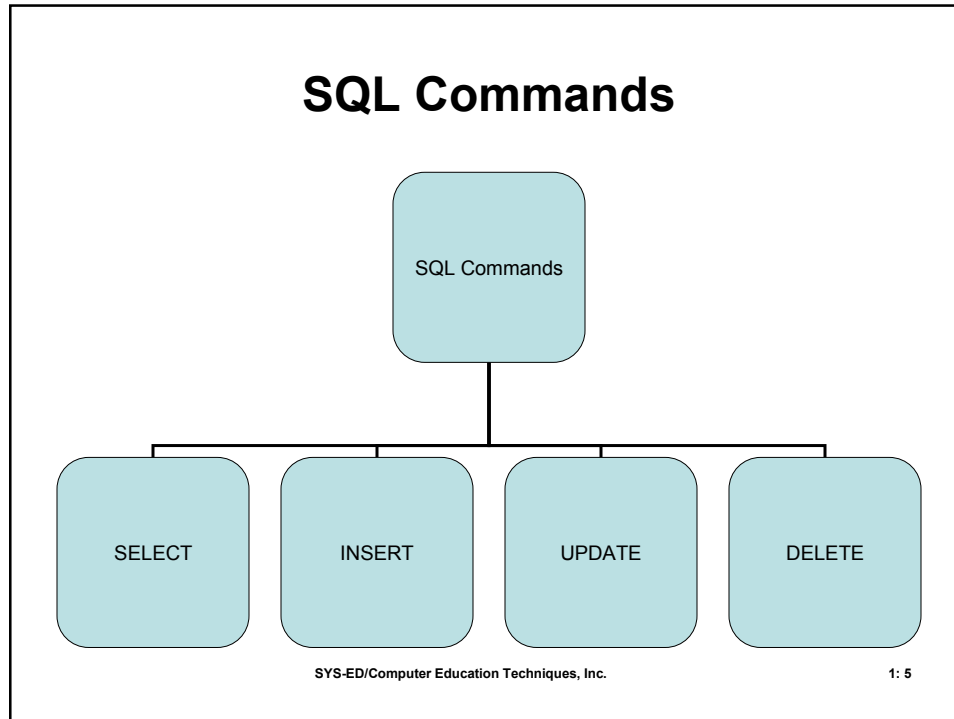
- Basic SQL statements include methods for creating, manipulating and deleting tables:
 - Create a table consisting of rows and columns of data.
 - Insert records or rows into the table.
 - Update or modify records and data types in the table.
 - Select or query the database for data matching a specified criteria.
 - Delete records from the table.
 - Drop or delete the table in its entirety.

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SQL Constraints

- All SQL statements include keywords that are used to define the operation being performed on the table.
- A semicolon (;) marks the end of a SQL statement.
 - SQL statements may include constraints that establish rule-sets for the data fields in a record.
- There are three primary constraints:
 - Unique - specifies that no two records can have the same value in a particular field.
 - Not null - specifies that a particular field cannot be blank.
 - Primary key - specifies that each record contains a unique identifier.

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Column Names

- Both table and column names must begin with a letter, their lengths may not exceed 30 characters and the name must not include any reserved words.
- Characters may include letters, numbers, and underscores.

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The Resultset

- The result from a SQL query is stored in a resultset.
- Most database software systems allow navigation of the resultset with programming functions.

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Language Elements

- The SQL language is subdivided into language elements:
 - Clauses are constituent components of statements and queries.
 - Expressions which produce either scalar values or tables consisting of columns and rows of data.
 - Predicates which specify conditions that can be evaluated to SQL three-valued logic or Boolean - true/false/unknown truth values.
 - Queries which retrieve the data based on specific criteria.
 - Statements, which can have a persistent effect on schemata and data, or control transactions, program flow, connections, sessions, or diagnostics.